

**EXH. JJJ-9
DOCKETS UE-19 ___/UG-19 ___
2019 PSE GENERAL RATE CASE
WITNESS: JOSHUA J. JACOBS**

**BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION**

**WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION,**

Complainant,

v.

PUGET SOUND ENERGY,

Respondent.

Docket UE-19 ___

Docket UG-19 ___

**EIGHTH EXHIBIT (NONCONFIDENTIAL) TO THE
PREFILED DIRECT TESTIMONY OF**

JOSHUA J. JACOBS

ON BEHALF OF PUGET SOUND ENERGY

JUNE 20, 2019

DC-11 Micro-Services
Corporate Spending Authorization (CSA)
Application Request

Getting started:

Date Submitted:	07/06/2018
Officer Sponsor:	Margaret Hopkins / Andy Wappler / Carol Wallace
Completed By:	Tina Valdez
Phase Gate:	Execute – Refer to section II phase gate changes

I. Project Overview

Problem Statement:	PSE Currently provides Application Programming Interface (API), which allows integration and access to back-end systems (SAP) using a myriad of technologies. This creates inconsistent methodologies for consuming back-end data as well as confusion around which services to use.
Future Vision:	Our goal is to provide a consolidated set of integration services that can be consumed across PSE Applications. This approach will provide consistency in integration delivery as well as an efficient and supportable set of integration definitions. This will enable customer self-serve transactions presentment on the digital channels (Web and Mobile)
Proposed Solution:	<p>The proposed solution includes the development and implementation of a set of Amazon Web Services (AWS) Micro services. A set of DataStream services will also be included to provide real-time integration with the SAP back-end. These technologies will use the AWS Micro service technologies to provide a robust, scalable and highly available set of services that can be consumed by any PSE System. The customer self-service transactions include:</p> <ul style="list-style-type: none">OutagePayment ArrangementBudget BillingPaymentsMaintain AccountPreference CenterBillingStart ServiceStop ServiceTransfer ServiceConstruction ServicesEE RebatesLate PaymentsCampaign ManagementCredit ReturnsLog ComplaintComm GatewayAccount History
Alternatives Evaluated:	The team (PSE IT and Accenture) completed analysis to determine the integration approach during the CI Sub-program planning phase recommending

Micro services on the AWS Cloud solution. The Micro services recommendation was presented and accepted by the IT Architecture Review Board. The IT Architecture Guiding Principles were followed in making this recommendation.

Primary ISP Alignment:

Customer

Type of Project:

Cost Benefit

OCM Considerations:

Impacted Users (Internal):

< 100 < 500 > 500

Impacted Customers (External):

None < 100K Electric or < 1K Gas > 100K Electric or >1K Gas

Internal Organizational Impact:

1 Dept or less 2-5 Dept > 5 Dept / Business Platform / Enterprise

Project Complexity &
Duration:

Straightforward, well understood < 6 months

Complex and well understood < 12 months

Complex and not well articulated > 12 months

II. Phase Gate Change Summary

July 2018:

Phase Gate (Design to Execute) Change Summary: All phase gate deliverables are complete and the project passed the audit.

Scope:

The scope has not changed significantly although there are [decisions](#) documented that describe minor deferred functionality. This project includes the additional costs for the CI Cloud Enablement Phase II project (WBS K.10012.01.02.14) and is managed by the same PM.

Budget:

This CSA update highlights the budget change which aligns with the approved 2nd quarter 2018 additional budget. The changes include the following 2018 forecast update:

- The contingency for the CI Sub-program is 15% (\$3,162,625) and will be managed at the CI Sub-Program portfolio by Tina Valdez and Carol Wallace with communication to leadership and the SC if contingency is accessed.
- The approved 2018 capital budget is \$6,827,685.
- The approved 2018 capital budget for the Cloud Enablement Project is \$238,392.
- The classification of O&M and Capital expenses were reviewed by Property accounting and a significant re-classification of O&M to Capital allocation was made by the GTZ Program PMO.

Capital = \$7,488,400 and 2018 O&M = \$0.00

Schedule:

The schedule has not changed since the January 2018 update. The release date is August 20, 2018.

Risk:

The Risk profile has not changed since the January 2018 update.

January 2018:

Scope:

Budget:

The projected capital budget for completing the defined work is \$7,103,829M.

Schedule:

No change in schedule. The project is still on track to deliver on August 2018.

Risk Profile:

The CI Sub-Program has a moderate risk profile score, which includes a major risk due to technology resource availability with competing IT priorities, specifically the Data Center Move.

III. Key Schedule and Financial Information

You may copy/paste this section from the Initiation Proposal form. Be sure to update each section as applicable.

Proposed Budget Year(s):	2017-2018
Expected In-Service Date:	08/30/2018
Initial Estimate:	Capital: \$7,024,354

Cost Estimate Maturity Score:

Score: Class 3 - Baseline Budget Ready

[Cost Estimation Classification Document:](#) _____

Updated Estimate for Total Project Cost:

Phase Name:	Design	Contingency %	0%	
Cost Type	Capital	OMRC	Opex**	Total
Cost (without contingency)	\$ 7,488,400	\$ -	\$ -	\$ 7,488,400
Contingency (auto-calculated)*	\$ -	\$ -	\$ -	\$ -
Total (auto-calculated)	\$ 7,488,400	\$ -	\$ -	\$ 7,488,400
TOTAL ANNUAL CASH BENEFIT	\$ 1	IF APPLICABLE		
PAYBACK IN YEARS (auto-calculated)	7488400.00	IF APPLICABLE		

* Contingency is carried at the sub-program level

** O&M is carried at the GTZ Program level by the PMT

Note 1: This project does not have any quantifiable cash benefits as it is part of the technical infrastructure that supports the Web, Communication Gateway, and Mobile App digital channels.

Note 2: The capital dollars listed for 2018 includes the \$233,800 for AWS Cloud support.

Estimated Five Year Allocation:

Category:	2017	2018	2019	2020	2021
Capital (incl. contingency)	\$660,715	\$6,827,685	\$0,000.00	\$0,000.00	\$0,000.00
OMRC	\$0,000.00	\$0,000.00	\$0,000.00	\$0,000.00	\$0,000.00
Opex	\$0,000.00	\$0,000.00	\$0,000.00	\$0,000.00	\$0,000.00
Cash O&M Benefits	\$0,000.00	\$0,000.00	\$0,000.00	\$0,000.00	\$0,000.00

Cash Benefits by Department:

Note: Benefits for Micro services are defined at the CI Sub-Program Level

Department Name	2017	2018	2019	2020	2021
N/A	\$0,000.00	\$0,000.00	\$0,000.00	\$0,000.00	\$0,000.00

Ongoing Annual O&M by Department: (e.g., maintenance, FTEs, cloud storage, etc.)

Note: Ongoing Annual O&M are represented by replacing existing service. Analysis to be completed by IT.

Category	2017	2018	2019	2020	2021
IT HW/SW/SaaS	\$0,000.00	\$0,000.00	\$100,000	\$200,000	\$200,000
IT Resources (2 FTE)		\$460,000	\$460,000	\$460,000	\$460,000

Non-Cash Benefits /

Future Cost Avoidance:

- Increased Self-Service Adoption
 - Customer Engagement – Positive Perception of PSE
 - Operational Efficiency
 - IT Decommission of current services infrastructure
-

Cash on Cash Single Payback: N/A

IV. Project Description and Objectives

Project Description:

- Define, Design and Implement the MSDSIP as a solution to support the integration needs of Micro services, streaming data-based web, mobile and data applications. The solution will make available the following core services/capabilities:
 1. Asynchronous and Synchronous Messaging Queuing.
 2. Data streaming proof of concept; for publishing at least these data streams. Priority of when to develop and deliver which stream will be determined as part of this project
 - SAP HANA ECC/CRM data (e.g., Customer transaction records, master data)
 - PSE's Cassandra data cache
 3. Select and implement an API Gateway solution for PSE
 4. Recommend, implement and hand-off CI/CD Tools and Processes, relative to Lambda, Container Management and the API Gateway

Scope will also include these supporting deliverables

- GTZ Program and Data sub-program use case review to drive out detailed requirements
- Business processes recommendations
- Security recommendations
- Governance recommendations

Micro services Foundation/Platform Release – Accenture 100%:

- AWS API Gateway setup, configuration, integration
- AWS API Gateway AuthN, AuthZ
- AWS Cognito setup, configuration, integration
- AWS ECS cluster, ECR setup, config, integration
- PSE base Docker image definition, build
- PSE base Lambda project Splunk setup, configuration, integration
- AWS Elastic Cache config
- AWS IAM role definition inventory
- Kinesis setup, config, integration
- kinesis base producer project, base consumer project
- CICD tools setup, config, integrate
- CICD service onboarding
- AWS SQS setup, config, installation

Micro services Regular Releases – PSE 70% Ownership, Accenture 30% Ownership:

- XFD01 - Account History

- XFD02 - Billing
- XFD03 - Meter Reading Corrections
- XFD04 - Payments
- XFD05 - Pay Channel / Autopay
- XFD06 - Credit Returns
- XFD07 - Budget Billing
- XFD08 - Payment Arrangements / Deferrals
- XFD09 - Late Payment, Disconnect/Reconnect
- XFD10 - Maintain Account
- XFD11 - Start Service
- XFD12 - Stop Service
- XFD13 - Move Service
- XFD14 - Outages
- XFD15 - Service Orders Status
- XFD16 - Construction Services (As Is)
- XFD17 - Preference Center
- XFD18 - EE Rebates
- XFD19 - Financial Assistance
- XFD20 - Log Customer Complaint
- XFD21 - Design Campaigns
- XFD22 - Execute Campaigns
- XFD23 - Monitor and Report on Campaign Results
- Landlord
- Cassandra Replication
- User Management
- Renewables
- Data Quality Management
- Mobile Specific
- Communication Gateway
- SAP BW

ISP Alignment:

ISP Objectives, Mandatory and/or Corporate Risk	Strategy <i>Abbreviated ISP strategy descriptions</i>	Benefit Description <i>Benefit, measurement and/or scorecard affected</i>
Financial	<input type="checkbox"/> Five-Year Strategic Plan <input type="checkbox"/> Maximize long-term value <input type="checkbox"/> Grow core business <input type="checkbox"/> Grow new business	
Customer	<input checked="" type="checkbox"/> Execute the Customer Experience Intent Statement <input type="checkbox"/> Recognition of PSE role in community <input type="checkbox"/> Customer preparedness & safety <input checked="" type="checkbox"/> Ideal customer behaviors <input type="checkbox"/> Listen & dialogue with customers	Introduce customer self-service transactions to be consumed by digital platforms ultimately driving ideal customer behavior and meet customer expectations for self-service.

ISP Objectives, Mandatory and/or Corporate Risk	Strategy <i>Abbreviated ISP strategy descriptions</i>	Benefit Description <i>Benefit, measurement and/or scorecard affected</i>
Process and Tools	<input checked="" type="checkbox"/> Streamline processes to drive effectiveness and efficiency <input type="checkbox"/> System reliability and integrity <input type="checkbox"/> Safety and security of systems, information and assets <input checked="" type="checkbox"/> Extract and leverage value from existing technology and assets <input type="checkbox"/> Optimize product/service portfolio consistent with long-term strategy	Improve call deflection to the Customer Care Center and leverage the investment in the SAP core CIS system.
People	<input type="checkbox"/> Develop/Retain best employees <input type="checkbox"/> Ownership, innovation and continuous improvement	
Safety	<input type="checkbox"/> Educate and train employees on effective safety and wellness strategies	

Project Objectives and Deliverables:

Objective	Outcomes / Deliverables	KPIs – Describe; Indicated Leading/Lagging	KPI Data Sources
Implement re-designed Website with the identified scope.	Go-Live by August 31, 2018		
Implement OCM including training	Business Units are knowledgeable about the change, they have the ability to implement required skills and behaviors and positive re-enforcement to sustain the change surveys are trending in the correct direction.		
Implement Successful Testing	No Defect Severity 1 or 2 upon UAT Completion		
Successful Go-Live Readiness for: <ul style="list-style-type: none"> • PSE Business Units • Customers 	Impacted business units are adequately trained, prepared and communicated with regarding the go-live. Customers are communicated with and the new website is available by the go-live date Customer adoption of the new self-service capabilities increases		

Project Alternatives Assessment:

Alternative	Pros	Cons	Cost	Duration
CI Digital RFP and Alternative Information TCO and Accenture ARB Recommendation				

V. Risk Management

Risk	Likelihood	Impact of Occurrence	How Monitored	Mitigation
The availability of productive environments for development, test, QA and pre-prod while coordinating around the Data Center Move and the Enhancement Pack 8 SAP Upgrade	Medium	Medium	Weekly Sub-Program Risk Meeting and the IT organization is working to integrate the CI environment requirements	There are 3 rd parties that can provide pre-production environments and/or PSE can create separate pre-prod environments to support the project activities which may be explored.
The availability of the SAP Multi-Channel Foundation for SAP.	Medium	Medium	Weekly Sub-Program Risk Meeting and there is a CI project to complete the pre-prod upgrade of SAP MCF.	The short term solution is to share the development environment with the FTIP 2 project.
Contractor Access to VDI provided in a timely manner is impacting team productivity	High	High	Team is monitoring the process on a regular basis.	There is no mitigation; the process is not open to improvements.
The project is utilizing a iterative waterfall agile methodology and the phase gates are not able to accommodate the iterative nature of design, build, deploy	Medium	Medium	The project team has a tightly managed schedule.	The team has requested an exemption to the standard phase gate process.

Risk Register: [Risk Register](#)

VI. High Level Schedule

Line #	Lifecycle Phase	Start	Finish	2016				2017				2018				2019
				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
1	Initiation	1/1/2016	12/30/2016	■												
2	Planning	2/6/2017	11/1/2017					■								
3	Design	12/27/2017	3/30/2018									■				
4	Execution	4/2/2018	8/30/2018									■				
5	Close-out	9/3/2018	10/15/2018													■

VII. Supporting Documentation

Cost Estimating and Budget: [01262018 Forecast](#)

Business Needs and Alternatives:

Benefits Realization Plan: [CI Benefits Analysis](#)

Project Audit Checklist:

OCM Sizing Worksheet: [Tiering Worksheet](#)

VIII. Original CSA Approvals:

I. Prepared By	Title	Role	Date	Signature
Tina Valdez	Business Delivery Manager	Program Manager		

Approved By	Title	Role	Date	Signature
CI Steering Committee:	Salman Aladin Brian Fellon Jennifer Tada Greg Zeller Harry Shapiro	Director Sponsors		
Carol Wallace Josh Jacobs		Day to Day Program Directors		

Acknowledgements	Title	Role	Date	Signature
		Benefit Owner*		
		IT		

*Benefit Owners must be added to the Approved By section during Execution Phase/Gate. – Note, as previously mentioned, there are no hard benefits associated with this project.